

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 19** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 19, the phrase "a ratio of 1:" is indefinite. A suggested correction is "a ratio of 1:1". Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. **Claims 13-14, 17-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bender (US Patent 5,362,818)**.

Regarding claims 13-14 and 17-20, Bender '818 teaches a binder (C1/L8) comprising

- a resin which is a modified condensation product of phenol and formaldehyde (C7/L68-C8/L2 and C9/L4-5), said modified condensation product having a molecular weight ranging from 300 to 10 million (C9/L16) and a melting point of at least 130°C (C8/L8 and C9/L9), and an absolutely aromatic-free solvent (C8/L9-14 and C9/L10-15).
- wherein said resin is a phenol-formaldehyde-modified rosin (colophonium) resin (C7/L61 and C8/L65).
- wherein said solvent is a mineral oil (C1/L6-7)
- wherein said solvent additionally comprises vegetable oil (C1/L6-7)
- wherein the solvent comprises a mixture of mineral oil and linseed oil, which is a vegetable oil, in a ratio from 1:1 to 5:1, and further, from 1:1 to 2:1 (C10/L12-14:– the ratio of mineral oil to linseed oil is 1.7:1, within the claimed range).

- Wherein the ratio of the resin component and solvent is from 1:1 to 1:2 (C10/L9-14).

Additionally, Bender '818 teaches that the average molecular weight is preferably greater than 3,000 with the upper limit being not critical to the invention disclosed (C7/L10).

Bender '818 does not disclose a modified condensation product having a molecular weight ranging from 300 to 10 million with more than 24% of the product having a molecular weight above 1 million.

Since the instant specification is silent to unexpected results, the specific molecular weight of the modified condensation product is not considered to confer patentability to the claims. As the modified condensation product properties, such as: viscosity, acid number and melting point (C6/L63-C7/L2) are variables that can be modified, among others, by adjusting the molecular weight, the precise molecular weight of the modified condensation product would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed molecular weight of the modified condensation product cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the molecular weight of the modified condensation product to obtain the desired balance between viscosity, acid number and melting point (In re Boesch, 617 F.2n. 272, 205 USPQ 215 (CCCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the

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optimum or workable ranges involves only routine skill in the art (In re Aller, 105 USPQ 223).

7. **Claim 15** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Bender (US Patent 5,362,818)**, as applied to claim 13 above, in view of **Fell (US 4,168,662)**.

Regarding claim 15, modified Bender '818 discloses all the limitations as set forth above.

However, Bender '818 does not explicitly state that the mineral oil used as a solvent must fulfill the requirements of the US Federal Drug Administration (FDA), 21 CFR 178.3620(a).

Fell discloses an ink (Abstract) used for printing on a variety of substrates, especially food products (Abstract). The ink as disclosed in Fell must include only non-toxic chemicals approved for use on food by the U.S. Food and Drug Administration (C2/L10-13).

It would be obvious to one of ordinary skill in the art at the time the invention was made to use non-toxic materials as specified by Fell in the ink composition of Bender. One would be motivated to do so in order to receive the expected benefit of being able to use the ink in situations in which the ink may be ingested and having the components of the ink be non-toxic to prevent illnesses or diseases which may be attributable to ink components.

It was known in many arts at the time of the invention that when a product may be ingested, components of the product must meet non-toxicity requirements as

established by the FDA. This inference of obviousness would have been drawn from creative steps that a person of ordinary skill in the art would normally employ.

Simple substitution of one known element (mineral oil meeting the FDA requirements of non-toxicity) for another (mineral oil in the ink composition of Bender '818) would achieve the predictable result of making the ink composition less toxic if the composition were to be ingested.

8. **Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Bender (US Patent 5,362,818)** in view of **Fell (US 4,168,662)** as applied to claim 15 above, and further in view of **O'Lenick (US 5,460,856)**.

Regarding claim 16, modified Bender '818 discloses all the limitations as set forth above.

Bender '818 discloses that the mineral oil used is a high-boiling mineral oil (C10/L12-13), but it does not disclose that the mineral oil used is a white oil.

O'Lenick discloses that oil-based inks are used in letterpress printing (C1/L7). The reference further discloses that the oil-based inks comprises of mineral oil (C4/L26-27). O'Lenick further discloses that white oil is a refined mineral oil (C4/L12-25) where the low boiling fraction of the oil is removed (C4/L12-15) and although unrefined mineral oil can be used in the application, white oil is the preferred embodiment (C4/L14-17).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the white oil as disclosed in O'Lenick with the binder for letterpress inks as taught in modified Bender '818. One would have been motivated to do so in order to receive the expected benefit of improved purity of the oil and the lack

of lower boiling fractions which become air borne in the process (O'Lenick C4, L22-25). Absent any evidence to the contrary and based on teachings of the prior art, there would have been a reasonable expectation of success.

9. **Claims 21 and 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bender (US Patent 5,362,818)** as applied to claim 13 above, and further in view of **Bender (US 5,405,932)**.

Regarding claim 21, modified Bender '818 discloses all the limitations as set forth above.

Additionally, Bender '818 teaches that the printing ink comprising the binder can be used as offset printing inks (C1/L8), but does not explicitly disclose that the ink is a letterpress printing ink.

Bender '932 teaches a resin made from a condensation of phenol and aldehyde (Abstract) modified by colophony (C2/L62) which can be use in mineral oil (abstract). Bender '932 also teaches that this resin can be used in printing inks for offset printing and letterpress printing (Abstract) therefore establishing equivalency of offset printing and letterpress printing.

It would be obvious to one of ordinary skill in the art at the time of the invention to use the binder as disclosed in modified Bender '818 in the method of letterpress printing of Bender '932. One would be motivated to do so in order to receive the expected benefit of being able to use the ink in a variety of printing methods, offset as well as letterpress. Absent any evidence to the contrary, and based upon the teachings of the prior art, there would have been a reasonable expectation of success. It would amount

to nothing more than the use of a known ink in a known printing method to accomplish an entirely expected result.

Regarding claim 24, modified Bender '818 teaches a printing ink which comprises at least one colorant and that colorant makes up at least 25% by weight of the ink (C10/L15).

10. **Claims 22 and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bender (US Patent 5,362,818)** in view of **Bender (US 5,405,932)**, as applied to claim 21 above, and further in view of **Fell (US 4,168,662)**.

Regarding claims 22 and 23, modified Bender '818 discloses all the limitations as set forth above. Bender '818 teaches that a pigment may be added to the resin (C10/L15) to make an ink. But it does not disclose that the colorants and additives are essentially non-toxic and are of food grade.

Fell discloses an ink (Abstract) used for printing on a variety of substrates, especially food products (Abstract). The ink as disclosed in Fell must include only non-toxic chemicals approved for use on food by the U.S. Food and Drug Administration.

It would be obvious to one of ordinary skill in the art at the time the invention was made to use non-toxic materials as specified by Fell in the ink composition of modified Bender '818. One would be motivated to do so in order to receive the expected benefit of being able to use the ink in situations in which the ink may be ingested and having the components of the ink be non-toxic to prevent illnesses or diseases which may be attributable to ink components.

It was well known in many arts at the time of the invention that when a product may be ingested, components of the product must meet non-toxicity requirements and should be food-grade. This inference of obviousness would have been drawn from creative steps that a person of ordinary skill in the art would normally employ.

Simple substitution of one known element (nontoxic and food grade colorants and additives) for another (colorants and additives) in the ink composition of Bender '818) would achieve the predictable result of making the ink composition less toxic if the composition were to be ingested.

11. **Claim 25** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Bender (US Patent 5,362,818)** in view of **Bender (US 5,405,932)**, as applied to claim 21 above, and further in view of **Cardoso (US 6,279,475)**.

Regarding claim 25, modified Bender '818 discloses all the limitations as set forth above. In addition, Bender '818 teaches that the ink can be printed on paper (C10/L27), however, it does not explicitly disclose using the ink composition on cigarette paper.

Cardoso discloses a method in which a flowable mixture of printing ink (C2/L37) is printed on cigarette paper (C2/L39).

It would be obvious to one having ordinary skill in the art at the time of the invention to use the ink as taught in modified Bender '818 for printing on cigarette paper as disclosed in Cardoso because it would amount to nothing more than the use of a known ink for its intended use in a known environment, printing on cigarette paper, to accomplish an entirely expected result.

Absent any evidence to the contrary, and based upon the teachings of the prior art, there would have been a reasonable expectation of success.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DORIS L. LEE whose telephone number is (571)270-3872. The examiner can normally be reached on Mon - Thurs, 7:30am - 5pm EST and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on (571) 272-1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Basia Ridley/
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